

**REMARKS**

Applicants have added new claims 19-26. Support for these claims is found e.g., in paragraph [0021]-[0023], [0026] and [0055] of the application as published and make clear that the blocked wavelengths of light are those having a wavelength which suppresses melatonin production and is less than at or about 530nm.

Applicants have reformatted claims 17 and 18, which formerly recited a use for the claimed devices for the inhibition or prevention of suppression of melatonin production, into method claims for a method for inhibiting or preventing suppression of melatonin production.

Claims 1-3, 7-12 and 17-18 stand rejected under 35 U.S.C. §103(a) for purportedly being unpatentable over U.S. Patent No. 5,400,175 ("Johansen et al."). In view of the following remarks and the attached Declaration of Shadab Ataur Rahman (the Declaration), Applicants request that the Examiner reconsider and withdraw the rejection.

The Office states that Johansen et al. discloses the claimed invention, except for the claims' limitation of selectively blocking more than 50% of incident wavelengths of light and transmitting more than 50% of non-blocked wavelengths of light, but that it would have been obvious to one of ordinary skill in the art at the time of the invention to selectively block more than 50 of incident wavelengths of light and transmitting more than 50% of non-blocked light. However, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) M.P.E.P. 2143.01(v). As discussed below, modifying Johansen et al.'s invention such that it transmits more than

50% of non-blocked light would render Johansen et al.'s device unsatisfactory for its intended purpose and so does not make Applicants' invention obvious.

Johansen et al. states that their invention pertains to the general field of sunglasses (Col. 1, lines 21-22) and states that rather than having two sets of sunglasses, Johansen et al.'s invention is usable over a wide range of lighting conditions from dark rainy days to brilliant dessert sun (Col. 3, lines 25-31). Johansen et al. only describes daytime use by, e.g., lifeguards, boaters, pilots, drivers, fishermen, and policemen (see Col. 21, line 43-Co. 22, line 64.) Furthermore, Johansen et al. stresses that their invention substantially blocks, i.e., blocks 80% or more, of the horizontally polarized incident light at each and every wavelength (Col. 15, lines 31-36 and lines 60-62) and further states "The ultraviolet radiation and blue light blocking polarizer lens is designed primarily for use with sunglasses to block horizontally polarized light, to selectively block selected wavelengths from 300 to 549 nanometers and ***to pass 30 to 40 percent of wavelengths longer than 625 nanometers.***"(Col. 3, lines 15-20)(emphasis added). See also Johansen et al. Figure 1 which demonstrates only 30-40% of the non-blocked wavelengths are transmitted by their invention, even with a cut-on filter of 530nm. Thus one of skill in the art would not be motivated to modify Johansen et al.'s invention such that it transmits more than 50% of non-blocked light, which would be all light above about 530nm as recited in Applicants' claims, because such a modification would render Johansen et al.'s device unsatisfactory for its intended purpose: it would be unsatisfactory for use over a wide range of lighting conditions from dark rainy days to brilliant dessert sun. Accordingly, Johansen et al. does not render the claimed invention obvious.

Not only does Johansen et al. fail to teach or suggest the claimed device, but Johansen et al. also fails to disclose the claimed method for inhibiting/preventing suppression of melatonin production in a human comprising providing the claimed device during peak melatonin production times to prevent the suppression of melatonin production in humans, as recited in

current claims 17 and 18. The accompanying Declaration compares the effects on melatonin production obtained using Applicants' invention and Johansen et al.'s invention, in particular the commercially available "Eagle Eyes glasses", which embodies Johansen et al.'s invention as evidence by the packaging which is marked with Johansen et al.'s patent numbers 5,400,175 and 5,177,509, see Exhibit B of the Declaration. See also Exhibit C, which demonstrates that the Eagle Eye glasses have the transmission/blocking profile depicted in Johansen et al. Figure 1. The Declarant Shadab Ataur Rahman, determined the transmission profile of the Eagle Eyes glasses and the profile demonstrate that the glasses have less than 50% transmission of all wavelengths of light (see paragraph 5 of the Declaration and Exhibit C). Exhibit H is a pdf copy of a photograph of the Eagle Eyes glasses and glasses encompassed by Applicants' claims side by side and although the quality of the black and white pdf copy is not as good as the original color photograph, in which Applicants' glasses appear as a tinted yellow and the Eagle Eyes glasses are a dark burnt amber, the pdf copy still demonstrates a clear difference in the transmission between the two inventions. If the Examiner so desires, Applicants would gladly provide the Examiner with a color copy of Exhibit H.

Regarding the use of the glasses, Johansen et al. only discloses using their invention during daylight hours and, as shown in the attached Declaration, the Eagle Eyes glasses' packaging further warns against using the sunglasses at night. See Exhibit G, second page under Important Information About Your Eagle Eyes®, Please Note "Eagle Eyes® sunglasses are designed for use under normal daylight condition.... Eagle Eyes sunglasses are not designed for use at night...." Thus there is no teaching by Johansen et al. that their invention should be used at peak melatonin secretion times and the Declaration demonstrates that the use of the Johansen et al.'s glasses during the day does not increase melatonin secretion, (thus does not inhibit suppression of melatonin production) as discussed further below.

As disclosed in the application paragraph [0005], in humans, the circadian rhythm for the release of melatonin is closely synchronized with the habitual hours of sleep. Typically, melatonin secretion starts at 2100 hrs (9pm) and increases to a peak at 0200 hr (2am) and then falls to a nadir about 0600 hr (6am). The Declaration describes experiments designed to determine if filtering ultraviolet and blue light during the day increases melatonin secretion above the basal levels that occur under darkness at night. The experiments were also designed to evaluate whether filtering UV and blue light during the day causes a second circadian peak in melatonin secretion after the first peak ordinarily occurring during darkness at night (paragraph 6).

Briefly, to test the circadian secretion profile of melatonin over 24 h, three male individuals were maintained in a dark room (total darkness) from 2000 h to 0800 h to induce melatonin secretion and then kept in a well lit environment between 0800 h to 2000 h to evaluate the effects of daytime light exposure on melatonin secretion. The same individuals wore commercially available Eagle Eyes glasses continuously between 1000 h and 1400 h to evaluate whether filtering UV and blue light from day light increases melatonin secretion above basal levels (paragraph 7). During the day (0800 h to 2000 h) the test subjects were exposed to a combination of natural sunlight and fluorescent lighting in the room and samples were collected every 2 h starting from 2000 h in 5 ml polypropylene tubes. The collected samples were immediately stored in a -20°C freezer to ensure equal treatment. Samples were assayed for melatonin using a commercially available Enzyme Linked Immunosorbent Assay (Alpco Diagnostics, USA) as per manufacturer recommendations. Participants were allowed to sleep during the night (2000 h to 0800 h).(paragraph 8).

The results of this study are shown graphically in Exhibit F. The Declaration paragraph 9, demonstrates that melatonin secretion in the test subjects displayed a typical robust circadian profile over 24 h. Only one major peak was observed at night under darkness and no secondary peaks of melatonin

production were observed during the day. Thus, filtering UV and blue light from daylight by wearing Johansen et al.'s glasses does not inhibit suppression of melatonin production nor does it promote a second peak of melatonin secretion during the day.

Applicants' claimed methods require selectively blocking more than 50 percent of incident wavelengths of light having a wavelength less than at or about 530 nm, while transmitting more than 50 percent of non-blocked wavelengths of light during peak melatonin production times using the claimed device. Johansen et al. does not teach or suggest a method where light is selectively blocked and transmitted during peak melatonin production times and the Declaration demonstrate that using the Johansen et al. invention, embodied by the Eagle eyes glasses, during daylight hours does not inhibit suppression of melatonin production. Thus, Johansen et al. does not teach or suggest the claimed method for inhibiting suppression of melatonin production.

In view of the foregoing remarks and amendments to the claims, Applicants request that the Examiner reconsider and withdraw the rejection of the claims under 35 U.S.C. §103(a).

Claims 13 and 14 stand rejected under 35 U.S.C. § 102(e) for purportedly being anticipated by United States Patent 6,902,296 ("Searfoss") and Claim 15 stands rejected under 35 U.S.C. § 103(a) for purportedly being obvious in view of Searfoss for essentially the identical reasons set forth in the Office Action of August 6, 2007. Applicants disagree.

Claim 13 recites "A light device comprising an optical filter operable to selectively block more than 50% of incident wavelengths of light having a wavelength less than at or about 530 nm, while transmitting more than 50% of non-blocked wavelengths of light . . . ." The Office acknowledges that Searfoss does not disclose such an invention by stating "Searfoss discloses the claimed

invention except for selectively blocking more than 50% of incident wavelengths of light and transmitting more than 50% of non-blocked wavelengths of light. It would have been obvious . . . . (Office Action page 5). As anticipation under 35 U.S.C. §102 requires “the disclosure in a single piece of prior art of each and every limitation of a claimed invention” see *Electro Med. Sys. S.A. v. Cooper Life Sciences*, 32 USPQ2d 1017, 1019 (Fed. Cir. 1994), Searfoss fails to anticipate claims 13 and 14. Searfoss also fails to render claim 15 obvious.

The main features of the device taught in Searfoss (‘the Searfoss device’) are provided at column 2, lines 11-19:

The nightlight includes a housing, one or more lamps for producing a plurality of light modes, a central processor for controlling the operation of the one or more lamps, one or more controls for allowing a user to select the desired lamp modes, and a power supply.

As an alternative to a number of lamps, light filters may be used with a single lamp to create the three specific light modes of the Searfoss device, which vary in light frequency and intensity (column 3, lines 8-10). As will be expanded on below, in none of the three operating modes does the Searfoss device anticipate the present device as recited in the claims.

The first mode of the Searfoss device is identified as a “sleep readiness mode”. In this mode, the Searfoss device produces light substantially from the blue (approximately 475 nm) and yellow (approximately 570 nm) portions of the light spectrum (column 5, lines 16-19). Clearly, the Searfoss device in this mode does *not* selectively block more than 50% of the incident wavelengths of light having a wavelength *less than at or about 530 nm*, while transmitting more than 50% of non-blocked wavelengths of light. In fact, it produces light in the selectively blocked wavelengths.

The second mode of the Searfoss device is identified as a “sleep help mode”. In this mode, dim monochromatic light in the blue to green visual light band stretching from approximately 450 nm to 540 nm is produced (column 5,

lines 35-38). Clearly, the device does *not* selectively block more than 50% of the incident wavelengths of light having a wavelength *less than at or about 530 nm*, while transmitting more than 50% of non-blocked wavelengths of light. In fact, it produces light in the selectively blocked wavelengths.

Finally, the Searfoss device includes a “light mode” for “promoting wakefulness”. In this mode, a substantially white light at an intensity brighter than the light produced during the sleep readiness mode or sleep help mode is produced (column 5, lines 62-65). Clearly, in the light mode, the Searfoss device does *not* selectively block light having a wavelength less than at or about 530 nm. It does not block any wavelengths of light. Accordingly, the available operating modes of the Searfoss device fail to anticipate the present invention.

The Office cites Searfoss, column 1, lines 21-43 to support the rejection but, the cited text is nothing more than a general statement that light affects melatonin production and that the hormone has physiological effects and is released during the period of darkness. There is no teaching or suggestion that the Searfoss device can be used to affect melatonin production at night. In fact, the only suggested use of the Searfoss device in relation to melatonin production is its use to impede melatonin production; in this regard, it is noted in the Description that “very bright light has been found to retard the production of melatonin in the body and assists in resetting a person’s biological clock” (column 3, lines 3-5). Searfoss does not even suggest the use of a light device for inhibiting the suppression of melatonin production caused by exposure to a lighted environment at night. While Searfoss mentions melatonin production to provide the patent with what the Applicants would characterize as a “scientific gloss”, at best, the device could be used to improve a subject’s sleep regime through psychological effects (for which there is no evidence provided). As such, Searfoss fails to anticipate or render the invention as currently claimed obvious.

In view of the foregoing remarks and amendments to the claims, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of Claims 13 and 14 under 35 U.S.C. § 102(e) and Claim 15 under 35 U.S.C. § 103(a).

Claim 16 stands rejected under 35 U.S.C. § 103(a) for purportedly being obvious in view of United States Patent 6,019,476 ("Kirschner"). Applicants disagree.

"[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely non-obvious [United States v. Adams 383 U.S. 39, 40 (1966)]."

KSR Int'l Co. v Teleflex Inc. 550 U.S. \_\_\_\_\_, 18 USPQ2d 1385 (2007).

Kirschner teaches the use of a light filter associated with a fluorescent light source for providing "full spectrum lighting", while limiting exposure to ultraviolet radiation. Kirschner teaches that full spectrum light can regulate melatonin levels (column 2, lines 42-44). This clearly teaches away from the present invention, which claims a device that inhibits the suppression of melatonin, which would be caused by exposure to full spectrum light at night. Kirschner fails to teach or suggest a device that selectively blocks wavelengths of light below 530 nm, while transmitting more than 50 percent of non-blocked wavelengths of light, and fails to suggest that such a device will inhibit the suppression of melatonin from exposure to light at night. Moreover, Kirschner teaches one to provide "full spectrum lighting" and to use a device that selectively blocks wavelengths of light below 530 nm, while transmitting more than 50 percent of non-blocked wavelengths of light would not provide full spectrum lighting. The proposed modification would render the Kirschner invention unsatisfactory for its intended purpose, and accordingly Kirschner does not suggest or motivate one of skill in the art to make the proposed modification. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)



Reply:

August 19, 2008

M.P.E.P. 2143.01(v) (if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification). As such Kirschner fails to render the claimed invention obvious.

In view of the foregoing remarks, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of Claim 16 under 35 U.S.C. § 103(a) for purportedly being unpatentable over Kirschner.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #101648.55966US).

Respectfully submitted,

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